

REMARKS

Claims 1-19 are pending in the application and stand rejected. Applicants gratefully acknowledge the Examiner's reconsideration and withdrawal of the previous claim rejections. With respect to the current rejections, Applicants respectfully traverse and request reconsideration of the current claims rejections based on the following remarks.

Claim Rejections - 35 U.S.C. § 102

Claims 1-4, 6-17 and 19 stand rejected as being anticipated by Cosman (U.S. Patent No. 6,405,072). It is respectfully submitted that at the very least, claims 1, 7 and 10 are patentably distinct and patentable over Cosman.

Indeed, from the explicit teachings of Cosman, it is glaringly clear that Cosman does not disclose or remotely suggest systems or methods for illuminating a target point in a real scene by *capturing a digital image of the scene, identifying image coordinates of a target point in the digital image, and using the identified image coordinates to project a light beam at the target point in the real scene corresponding to the target point in the digital image*, as essentially recited in claims 1, 7 and 10.

Cosman discloses a system (such as depicted in FIG. 1) in which a camera system C comprising a set of cameras (17, 18 and 19) and a light source (16), is used to sense a position of a patient and an *x-ray beam B* (emitted from radiation source R of the LINAC machine L) on the basis of marker locations (index makers 20, 21, 23, 24) on the patient P and markers (30, 31, 32) on the machine L, to thereby correlate the "camera space" to an "image space" of patient image data acquired during a previous scan. In this manner, the treatment machine L and/or patient supporting couch F can be mechanically

controlled (via controller (38)) such that the radiation beam B is aligned to an anatomical target of the patient with respect the previous acquired scan data (see, generally, Col. 3, line 29 ~ Col. 6, line 59).

Although Cosman discloses an illumination source (16) as part of the camera system C, Cosman does not disclose or suggest that this illumination source (16) is controlled in any manner to illuminate a target point. In fact, Cosman specifically discloses that the light source (16) may not always be needed and that the light source (16) is simply used to enhance the SNR (signal to noise ratio) of reflected light from the index markers as related to the background (see, Col. 4, lines 25-34).

Therefore, based on the above, at the very least, Cosman does not disclose or suggest *projecting a light beam at a target point in the real scene, which corresponds to the target point in the digital image* (of the real scene), *using the identified image coordinates*, as essentially claimed in claims 1, 7 and 10. Cosman discloses nothing more than positioning/moving a patient P such that a x-ray radiation beam B can irradiate a target anatomical location. Clearly, Cosman does not disclose or suggest *controlling an illumination device to project the beam of light at the target point in the scene*, as essentially recited in claim 10.

Moreover, it appears that the analysis of claim 1 (an similarly claims 7 and 10) with regard to Cosman, as recited on page 2-3 of the Office Action, does not support a *prima facie* case of anticipation. The Examiner relies on the camera system C of Cosman as disclosing the claimed “*capturing a digital image of a scene*”. Examiner then appears to construe the claimed step of “*identifying image coordinates of a target point in the digital image of the scene*” as being analogous to “*identifying marker locations on*

the patient P" (i.e., locations of index makers 20, 21, 23, 24, etc.). With such interpretation, it follows that Examiner would construe Cosman as "*projecting a light beam at a target point in the real scene, which* (target point in the real scene) *corresponds to the target point* (i.e., the marker) *in the digital image* (captured by camera system C), *using the identified image coordinates* (i.e., the image coordinates of the marker location). This interpretation and construction of Cosman with regard to claim 1 is simply erroneous and does not support a *prima facie* case of anticipation of claim 1.

In particular, Cosman does not even disclose a system for controlling an illumination source to project light at markers in a real scene, as identified in a digital image of a real scene. At the very least, as noted above, there is nothing in Cosman that relates to controlling an illumination source. Furthermore, the index makers of Cosman are merely points that enable the system to correlate the digital image of the scene with a previously obtained image scan data of the patient to identify a desired anatomical target point in the image data with respect to the real scene and then position the patient to irradiate the anatomical target point with a radiation beam B. In this respect, the teachings of Cosman are clearly fundamentally distinct, and simply don't support a *prima facie* case of anticipation against any of claims 1, 7 or 10.

Therefore, for at least the above reasons, claims 1, 7 and 10 are patentable over, and not anticipated by, Cosman. Further, claims 2-4, 6, 8, 9, 12-17 and 19 are patentable over, and not anticipated by, Cosman at least by virtue of their dependence from respective base claims 1, 7 or 10. Accordingly, withdrawal of the anticipation rejections is requested.

Claim Rejections - 35 U.S.C. § 103

Claims 5, 11 and 18 stand rejected as being obvious as follows:

- (i) claim 11 stands rejected as being unpatentable over Cosman; and
- (ii) claims 5 and 18 stand rejected as being unpatentable over Cosman in view of Kuban et al. (U.S. Patent No. 5,359,363 to Kuban et al.

The obviousness rejections are based, in part, on the assertion that Cosman discloses all elements of base claims 1 and 10. However, claim 11 is patentable over Cosman for at least the same reasons given above for claim 10, from which claim 11 depends. Further, claims 5 and 18 are patentable over the combination of Cosman and Kuban for at least the same reasons given above for claims 1 and 10, from which claims 5 and 18 depend, respectively. Clearly, without elaboration, Kuban does not cure the deficiencies of Cosman as discussed above with regard to claims 1, 7 and 10. Accordingly, withdrawal of the obvious rejections is respectfully requested.

Respectfully submitted,

Donald B. Paschburg
Donald Paschburg
Reg. No. 33,753
Attorney for Applicants

Siemens Corporation
170 Wood Avenue South
5th Floor - IPD Dept.
Iselin, New Jersey 08830
(732) 321-3191